09/04/2007,10519807c.trn

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LOGINID:SSPTASXY1626

PASSWORD:
* * * * * * RECONNECTED TO STN INTERNATIONAL * * * * * *
SESSION RESUMED IN FILE 'HCAPLUS' AT 15:59:34 ON 09 APR 2007
FILE 'HCAPLUS' ENTERED AT 15:59:34 ON 09 APR 2007
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	97.46	269.77

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-14.04	-14.04

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	97.46	269.77

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-14.04	-14.04

FILE 'REGISTRY' ENTERED AT 15:59:46 ON 09 APR 2007
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STRUCTURE FILE UPDATES: 8 APR 2007 HIGHEST RN 929518-97-8
DICTIONARY FILE UPDATES: 8 APR 2007 HIGHEST RN 929518-97-8

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TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

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REGISTRY includes numerically searchable data for experimental and
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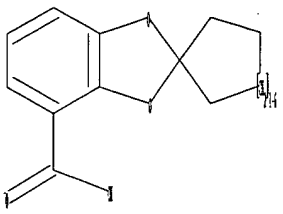
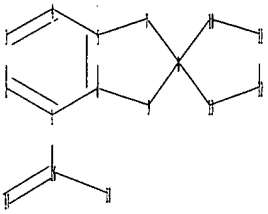
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=>
Uploading C:\Program Files\Stnexp\Queries\10519807react.str



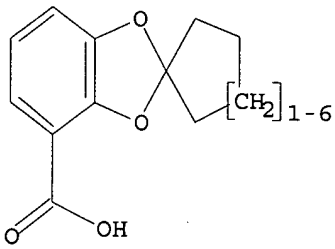


chain nodes :
16 17 18
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13
chain bonds :
1-16 16-17 16-18
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 8-10 8-13 10-11 11-12 12-13
exact/norm bonds :
5-7 6-9 7-8 8-9 8-10 8-13 10-11 11-12 12-13
exact bonds :
1-16
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 16-17 16-18

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 16:CLASS 17:CLASS 18:CLASS

L5 STRUCTURE UPLOADED

=> d l5
L5 HAS NO ANSWERS
L5 STR



Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SEARCH INITIATED 16:00:14 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 7 TO ITERATE

100.0% PROCESSED 7 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

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FULL FILE PROJECTIONS:  ONLINE   **COMPLETE**
                        BATCH    **COMPLETE**
PROJECTED ITERATIONS:             7 TO      298
PROJECTED ANSWERS:                0 TO        0

L6            0 SEA SSS SAM L5

=> s l5 full
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FULL SCREEN SEARCH COMPLETED -       72 TO ITERATE

100.0% PROCESSED       72 ITERATIONS                                4 ANSWERS
SEARCH TIME: 00.00.01

L7            4 SEA SSS FUL L5

=> file hcaplus
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                     172.10     441.87

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)            SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00     -14.04

FILE 'HCAPLUS' ENTERED AT 16:00:26 ON 09 APR 2007
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FILE COVERS 1907 - 9 Apr 2007  VOL 146 ISS 16
FILE LAST UPDATED: 8 Apr 2007  (20070408/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s l3/P and l7/ract
             3 L3/P
             6 L7
       2965078 RACT/RL
             6 L7/RACT
                 (L7 (L) RACT/RL)
L8           3 L3/P AND L7/RACT

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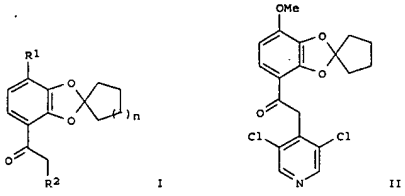
L8 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 18 Jan 2004
GI



I II

AB This invention pertains to a method for producing 1,3-benzodioxole derivs. with general formula of I [wherein R1 = OH or (un)substituted alkoxy; R2 = (un)substituted (hetero)aryl; n = 1-6]. For example, 2,3,4-trimethoxybenzoic acid was treated with 55% aqueous HI in AcOH to give 2,3-dihydroxy-4-methoxybenzoic acid (73%). The above compound was reacted with 1-methoxycyclopentene in cyclopentanone, followed by the addition of BuI in DMF in the presence of K2CO3 to provide 7-methoxy-1,3-benzodioxole-2-spirocyclopentane-4-carboxylic acid Bu ester. The ester obtained was reacted with 3,5-dichloro-4-picoline in THF in the presence of LiN(TMS)2 to afford II in 54% total yield. This invention provides a simple method to make 1,3-benzodioxole derivs. in high yields and large scale. I are useful compds. or intermediates as PDE IV inhibitors (no data).

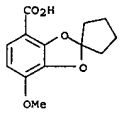
ACCESSION NUMBER: 2004:41458 HCAPLUS
DOCUMENT NUMBER: 140:111406
TITLE: Process for preparation of 1,3-benzodioxole derivatives
INVENTOR(S): Atsumi, Toshiyuki; Yanagisawa, Arata; Chujo, Iwao; Tsumuki, Hiroshi; Mohri, Shinichiro
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004005276	A1	20040115	WO 2003-JP8478	20030703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2491464	A1	20040115	CA 2003-2491464	20030703
AU 2003252467	A1	20040123	AU 2003-252467	20030703
EP 1535920	A1	20050601	EP 2003-762875	20030703
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005245750	A1	20051103	US 2004-519807	20041229
PRIORITY APPLN. INFO.:			JP 2002-194273 A	20020703
			WO 2003-JP8478 W	20030703

OTHER SOURCE(S): CASREACT 140:111406; MARPAT 140:111406

IT 185407-83-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of benzodioxole derivs.)

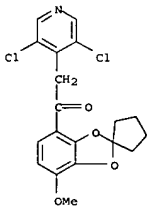
RN 185407-83-4 HCAPLUS
CN Spiro[1,3-benzodioxole-2,1'-cyclopentane]-4-carboxylic acid, 7-methoxy- (9CI) (CA INDEX NAME)



IT 185406-34-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of benzodioxole derivs.)

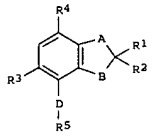
RN 185406-34-2 HCAPLUS
CN Ethanone, 2-(3,5-dichloro-4-pyridinyl)-1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 13 Sep 2002
GI



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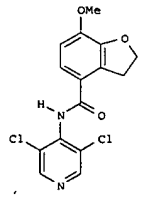


II

AB Title compds. I [R1 and R2 independently = H, CN, (un)substituted alkyl, cycloalkyl, polycycloalkyl, alkenyl, etc.; or R1 and R2 are combined to represent a saturated carbon ring together with a carbon atom adjacent thereto; or R2, and R6 or R7 are combined to form a single bond; R3 = H, Ph, or halo; R4 = OH, alkoxy, etc.; A represents (un)substituted methylene or O; B represents O, NR6, (un)substituted methylene or ethylene; D represents (i) -C(R8)(R9)-X- (wherein X represents (un)substituted methylene, S, or (un)substituted N), (ii) -C(R10)=Y- [Y represents -C(R11)-Z- (wherein Z represents CONH, CONHCH2, or a bond), or N], or (iii) a bond; and R5 represents aryl, an aromatic heterocyclic group, cycloalkyl, pyridine-N-oxide, cyano, or lower alkoxycarbonyl; R6 = H, alkyl, cycloalkyl, alkenyl, (un)substituted aryl, etc.; R7 = H, (un)substituted alkyl, alkoxy, alkanoyloxy, etc.; R8 = H, OH, (un)substituted alkyl, cycloalkyl, aryl, aromatic heterocycle, etc.,; R9 = H, (un)substituted alkyl, cycloalkyl, alkenyl, alkoxy, etc.; or R8 and R9 combine to form O, S or (un)substituted amine; R10 = H, (un)substituted alkyl, cycloalkyl, alkenyl, alkoxy, etc.; R11 = H, CN, (un)substituted alkyl, cycloalkyl, alkenyl, alkoxy, etc.], or pharmaceutically acceptable salts thereof, are prepared and disclosed as phosphodiesterase 4A (PDE IV) inhibitors. Thus, II was prepared in 48% yield by conversion of 7-methoxy-2,3-dihydrobenzofuran-4-carboxylic acid to the corresponding

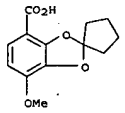
L8 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
acid chloride and subsequent amidation with 4-amino-3,5-dichloropyridine. Assays with recombinant human PDE4A, I demonstrated enzyme inhibitory activity values of 57-100 (%, 10-7M). As inhibitors of PDE IV activity, I
are useful as therapeutic agents for asthma, allergy, rheumatoid arthritis, psoriasis, myocardial infarction, depression, and the like.

ACCESSION NUMBER: 2002:696660 HCAPLUS
DOCUMENT NUMBER: 137:232641
TITLE: Preparation of benzofuran or benzodioxole derivatives which possess PDE IV inhibitory activity
INVENTOR(S): Ohshima, Etsuo; Kawakita, Takashi; Yanagawa, Koji; Iida, Kyoichiro; Koike, Rie; Nakasato, Yoshisuke; Matsuzaki, Tohru; Ohmori, Kenji; Sato, Soichiro; Ishii, Hidee; Manabe, Haruhiko; Ichimura, Michio; Suzuki, Fumio
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 166 pp., Cont.-in-part of U.S. Ser. No. 784,187, abandoned.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

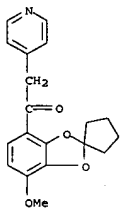
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002128290	A1	20020912	US 1997-974739	19971119
US 6514996	B2	20030204		
WO 9636624	A1	19961121	WO 1996-JP1327	19960520
W: AU, CA, CN, HU, JP, KR, NO, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CN 1154697	A	19970716	CN 1996-190529	19960520
US 6716987	B1	20040406	US 2001-23091	20011220

PRIORITY APPLN. INFO.: JP 1995-121537 A 19950519
JP 1995-258651 A 19951005
WO 1996-JP1327 A2 19960520
US 1997-784187 B2 19970115
JP 1996-307781 A 19961119
JP 1996-307782 A 19961119
JP 1996-307783 A 19961119
JP 1997-268399 A 19971001
JP 1997-268400 A 19971001
US 1997-974739 A3 19971119

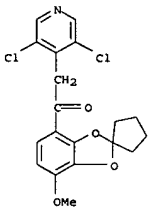
L8 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)
OTHER SOURCE(S): MARPAT 137:232641
IT 185407-83-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation and phosphodiesterase inhibitory activity of
substituted benzofuran and benzodioxoles and analogs thereof)
RN 185407-83-4 HCAPLUS
CN Spiro[1,3-benzodioxole-2,1'-cyclopentane]-4-carboxylic acid, 7-methoxy- (9CI) (CA INDEX NAME)



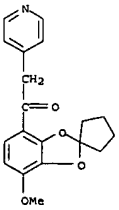
IT 185406-35-3P
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(target compound; preparation and phosphodiesterase inhibitory activity of
substituted benzofuran and benzodioxoles and analogs thereof)
RN 185406-35-3 HCAPLUS
CN Ethanone, 1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)-2-(4-pyridinyl)- (9CI) (CA INDEX NAME)



IT 185406-34-2P 185406-37-5P 457935-53-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(target compd.; prepn. and phosphodiesterase inhibitory activity of substituted benzofuran and benzodioxoles and analogs thereof)
RN 185406-34-2 HCAPLUS
CN Ethanone, 2-(3,5-dichloro-4-pyridinyl)-1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)- (9CI) (CA INDEX NAME)



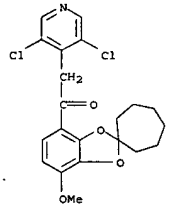
RN 185406-37-5 HCAPLUS
CN Ethanone, 1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)-2-(4-pyridinyl)-, hydrochloride (9CI) (CA INDEX NAME)



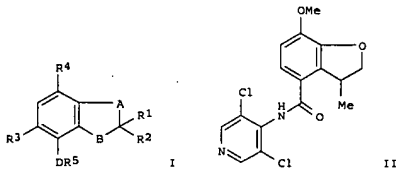
● HCl

RN 457935-53-4 HCAPLUS
CN Ethanone, 2-(3,5-dichloro-4-pyridinyl)-1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cycloheptan]-4-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)



L8 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 27 Jan 1997
GI



I II

AB The title compds. I [R1 and R2 are the same or different and each represents hydrogen, lower alkyl, cyano, etc., or R1 and R2 together with the adjacent carbon atom may form a saturated carbocyclic ring, or R2 together with R11 or R13, as will be described below, may form a single bond; R3 represents hydrogen, Ph or halogeno; R4 represents hydroxy, lower alkoxy, etc.; A represents O, etc.; B represents O, NR11, C(R12)(R13), etc. ; D represents a bond, etc.; and R5 represents aryl, heteroaryl, cycloalkyl, pyridine-N-oxide, cyano or lower alkoxycarbonyl; R11 = H, alkyl, etc.; R12, R13 = H, (un)substituted alkyl, etc.] are prepared The title compound II in vitro at 10-6 M gave 77% inhibition of phosphodiesterase IV.

ACCESSION NUMBER: 1997:56191 HCAPLUS
DOCUMENT NUMBER: 126:74738
TITLE: Preparation of heterocyclic compounds as phosphodiesterase IV inhibitors
INVENTOR(S): Kawakita, Takashi; Ohshima, Etsuo; Yanagawa, Koji; Iida, Kyoichiro; Koike, Rie; Ichimura, Michio; Manabe, Haruhiko; Ohmori, Kenji; Suzuki, Fumio; Nakasato, Yoshisuke
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 238 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 7
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9636624	A1	19961121	WO 1996-JP1327	19960520

W: AU, CA, CN, HU, JP, KR, NO, US
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

L8 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

CA 2195755	A1	19961121	CA 1996-2195755	19960520
AU 9657029	A	19961129	AU 1996-57029	19960520
AU 705690	B2	19990527		
EP 771794	A1	19970507	EP 1996-915194	19960520
EP 771794	B1	20060503		

R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE

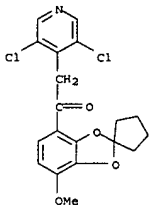
CN 1154697	A	19970716	CN 1996-190529	19960520
AT 325110	T	20060615	AT 1996-915194	19960520
ES 2258775	T3	20060901	ES 1996-915194	19960520
PT 771794	T	20060929	PT 1996-915194	19960520
NO 9700151	A	19970306	NO 1997-151	19970114
NO 317631	B1	20041129		
US 2002128290	A1	20020912	US 1997-974739	19971119
US 6514996	B2	20030204		
HK 1000785	A1	20060630	HK 1997-102285	19971128
US 6716987	B1	20040406	US 2001-23091	20011220

PRIORITY APPLN. INFO.:

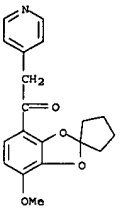
JP 1995-121537	A	19950519
JP 1995-258651	A	19951005
WO 1996-JP1327	W	19960520
JP 1996-307781	A	19961119
JP 1996-307782	A	19961119
JP 1996-307783	A	19961119
US 1997-784187	B2	19970115
JP 1997-268399	A	19971001
JP 1997-268400	A	19971001
US 1997-974739	A3	19971119

OTHER SOURCE(S): MARPAT 126:74738
IT 185406-34-2P 185406-35-3P 185406-37-5P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of heterocyclic compds. as phosphodiesterase IV inhibitors)
RN 185406-34-2 HCAPLUS
CN Ethanone, 2-(3,5-dichloro-4-pyridinyl)-1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)

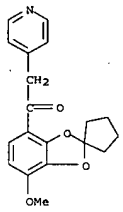


RN 185406-35-3 HCAPLUS
CN Ethanone, 1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)-2-(4-pyridinyl)- (9CI) (CA INDEX NAME)



RN 185406-37-5 HCAPLUS
CN Ethanone, 1-(7-methoxyspiro[1,3-benzodioxole-2,1'-cyclopentan]-4-yl)-2-(4-pyridinyl)-, hydrochloride (9CI) (CA INDEX NAME)

L8 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN (Continued)



● HCl

IT 185407-83-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of heterocyclic compds. as phosphodiesterase IV inhibitors)
RN 185407-83-4 HCAPLUS
CN Spiro[1,3-benzodioxole-2,1'-cyclopentane]-4-carboxylic acid, 7-methoxy- (9CI) (CA INDEX NAME)